PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : E04D 13/14, 13/03 — A1

(11) International Publication Number: WO 94/00654

(43) International Publication Date: 6 January 1994 (06.01.94)

(21) International Application Number: PCT/AU93/00310

(22) International Filing Date: 25 June 1993 (25.06.93)

(30) Priority data:
PL 3145 25 June 1992 (25.06.92) AU
PL 5877 16 November 1992 (16.11.92) AU

(71) Applicant *(for all designated States except US)*: REGENT SHEET METAL PTY. LTD. [AU/AU]; 39 Wellington Road, East Brisbane, QLD 4169 (AU).

(72) Inventor; and

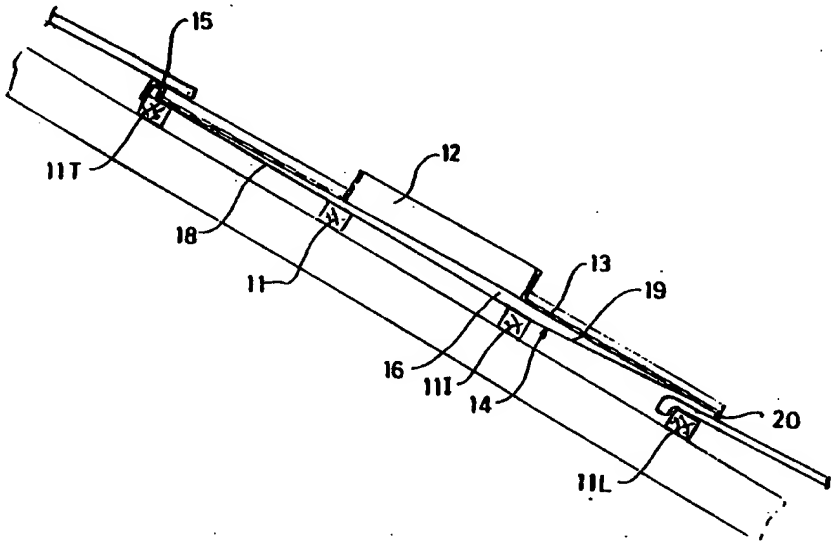
(75) Inventor/Applicant *(for US only)* : DEUTSCH, Thomas, K. [AU/AU]; 39 Wellington Road, East Brisbane, QLD 4169 (AU).

(74) Agent: PIZZEY, John, Kingston; Pizzey & Company, 6/444 Queen Street, Brisbane, QLD 4000 (AU).

(81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: IMPROVED ROOF APERTURE FLASHING ASSEMBLY



(57) Abstract

A roof aperture flashing assembly (10) is provided which has particular application for skylight installations. The flashing assembly (10) has a through-roof upstand (12) extending from a base tray assembly which has tray portion (13) adapted to cover an aperture formed in a roof. Opposed flashing assemblies (14) extending along opposite sides of the base tray portion and underly the roofing (7/8). A top flange assembly or upper portion of the base tray portion (13) extends in use beneath the roofing (7/8) and a lower apron flange assembly (20) is formed so that its lower edge may substantially conform to the roof profile. For use on tile roofs, the opposed flashing assemblies (14) include integral upper and lower laterally extending flanges (18 and 19) which diverge downwardly from opposed ends with respect to the base tray portion (13).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FR	France	MR	Mauritania
AU	Australia	GA	Gabon	MW	Malawi
BB	Barbados	GB	United Kingdom	NE	Niger
BE	Belgium	GN	Guinea	NL	Netherlands
BF	Burkina Faso	GR	Greece	NO	Norway
BG	Bulgaria	HU	Hungary	NZ	New Zealand
BJ	Benin	IE	Ireland	PL	Poland
BR	Brazil	IT	Italy	PT	Portugal
BY	Belarus	JP	Japan	RO	Romania
CA	Canada	KP	Democratic People's Republic of Korea	RU	Russian Federation
CF	Central African Republic			SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovak Republic
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LU	Luxembourg	TD	Chad
CS	Czechoslovakia	LV	Latvia	TG	Togo
CZ	Czech Republic	MC	Monaco	UA	Ukraine
DE	Germany	MG	Madagascar	US	United States of America
DK	Denmark	ML	Mali	UZ	Uzbekistan
ES	Spain	MN	Mongolia	VN	Viet Nam
FI	Finland				

"IMPROVED ROOF APERTURE FLASHING ASSEMBLY"

-- BACKGROUND OF THE INVENTION --

This invention relates to improvements to roof aperture flashing assemblies.

This invention has particular application to roof aperture flashing assemblies for skylights and the like. This invention it is not limited to such applications and can provide communication through a roof for a roof vent, duct or other apparatus. However for illustrative purposes only, this invention will be described hereinafter with reference to its application to skylights.

Skylight bases which frame and flash the roof aperture traditionally include a base tray which has an upper portion which extends under the upper roof covering and a lower portion which extends above the lower roof covering, and oppositely extending side flanges having edge formations which substitute for the missing roof section and which may engage in the overlap sections of the roof. Typically the roof covering is cut away leaving exposed edges overlying the tray and being spaced from the through-roof upstand for passage of water along the tray. As the tray must channel all the water from the roof immediately thereabove and about the obstruction which the upstand constitutes, a significant exposed gap is left between the roof edging and the upstand which is both unsightly and results in un-reliability in use with rain water frequently leaking over the side edges of the tray.

Conventional skylight bases are fabricated from pressed sections in order that a rectangular one piece perimeter frame may be fabricated. Typically the perimeter frame for the skylight has respective side rails pressed and welded together at the frame corners. Each rail includes a base flange which is adapted to be supported by the roof structure. This base flange extends under the upper roof covering and above the lower roof covering, whether the covering be in the form of metal or plastics sheets or tiles.

Each rail also incorporates an outwardly extending top flange which may be perforated for ventilation and adapted to support the skylight dome at its outer edge. The inner edge of the skylight dome is supported by an upstanding web pressed with the base flange and the top flange and adapted to provide the necessary spacing therebetween to accommodate the roof covering. Typically each rail is formed from a sheet material having an apertured edge portion which forms the top flange through which the space beneath the skylight may be ventilated.

A disadvantage associated with the current method of constructing such skylights is that the manufacturing process is relatively time consuming, is subject to distortion and the welding process destroys protective coatings which may be metallic coatings or plastic coatings. Destruction of such protective coatings can result in the rusting of the base frame especially in applications where the new base frame is in contact with dissimilar metals in the roof structure.

-- SUMMARY OF THE INVENTION --

This invention aims to alleviate at least one of the above disadvantages and to provide roof aperture flashing assemblies which will be reliable and efficient in use.

With the foregoing in view, this invention in one aspect resides broadly in a roof aperture flashing assembly comprising a through-roof upstand and a base tray assembly through which said upstand extends, said base tray assembly including:-

a base tray portion adapted to cover the roof aperture;

opposed flashing assemblies extending along opposite sides of said base tray portion;

a top flange assembly adapted to extend beneath the roof, and

a lower apron flange assembly which is so formed that its lower edge may substantially conform to the roof profile.

It is preferred that the through-roof upstand terminates in an lip portion suitably formed to enable an outwardly

extending dome supporting flange to be clipped thereto. The dome supporting flange may be of any suitable type adapted to provide stiffness to the upper end of the upstand. Preferably however the dome supporting flange is provided with ventilation apertures therethrough and has an outer free edge portion remote from the upstand adapted for supporting a skylight dome or the like.

In one embodiment of the invention the apron flange and/or the opposed flashing assemblies are relatively wide planar flanges formed from a malleable material, the malleable characteristics of which are substantially unchanged during the drawing or pressing process by which the base tray assembly is formed. Thus these malleable flanges may be contoured on site so as to substantially conform to the roof profile. The malleable material may be a malleable material which hardens during the drawing process. Suitably the material is malleable aluminum sheet material but of course it may be formed from steel sheet including painted and/or coated sheet steel, copper or stainless steel or be formed from a composite sheet including a lead portion.

It is also preferred that the lower apron flange and/or the adjacent portions of the side flashings are inclined upwardly relative to the remaining portion of the side flanges which may be co-planar with the substantially planar base tray portion or spaced downwardly therefrom and adapted to suit the contour of the roof. The apron flange may be provided with a downturned free edge which may be cut away on-site or pre-cut to seat upon a corrugated or ribbed roofing profile.

In another aspect this invention resides broadly in a skylight assembly including a roof aperture flashing assembly as variously defined above, a dome supporting flange attached to the upstand and a skylight dome supported by said dome supporting flange. Preferably the supporting flange is apertured for ventilation purposes and the skylight dome is supported by the outer edge of the supporting flange. The

dome supporting flange may be formed of any suitable material including plastics material and if desired it may be formed integrally with the skylight dome. Suitably the inner edge of the supporting flange is provided with a inverted U-shaped mounting portion adapted to engage over the upper lip of the through-roof upstand.

The opposed flashing assemblies and the top flange assembly may be substantially co-planar extensions of the base tray portion. Alternatively the opposed flashing assemblies may each extend outwardly from respective upstanding side ribs forming side terminations of the base tray portion spaced from the through-roof upstand.

It is also preferred that the opposed flashing assemblies include integral upper and lower laterally extending flanges contained in a plane which diverges downwardly with respect to the plane containing said base tray portion and lower laterally extending flanges extending downwardly from the upper flanges and being contained in a plane which converges downwardly with respect to the plane containing the base tray portion.

In yet another aspect this invention resides broadly in a tile roof aperture flashing assembly including:-

a through-roof upstand;

a substantially planar base tray assembly supporting said upstand and through which said upstand extends;

an upstanding rib assembly extending across the upper edge and along the opposites sides of said base tray assembly, said upstanding rib assembly including an upper edge rib which extends along the upper edge of said base tray assembly and respective side ribs which extend along the opposite side(s) edges of said base tray assembly between said upper edge and the lower edge of said base tray assembly, each said side rib being spaced from said upstand and each forming a stop for locating the edges of the innermost tiles extending alongside the roof aperture and beside said respective side ribs;

a downwardly extending flange extending across said lower edge of said base tray assembly and being so formed that said flange may be cut away to conform to the roof tile profile;

opposed flashing assemblies each extending outwardly from respective said side ribs, each said flashing assembly including integral upper and lower laterally extending flanges, each said upper laterally extending flange extending downwardly from adjacent said upper edge to the said lower laterally extending flange and being contained in a plane which diverges downwardly with respect to the plane containing said base tray assembly and each said lower laterally extending flange extending downwardly from said upper laterally extending flange to terminate adjacent said lower edge and being contained in a plane which converges downwardly with respect to the plane containing said base tray assembly, and wherein the lengths of said upper laterally extending flanges are substantially equal.

-- BRIEF DESCRIPTION OF THE DRAWINGS --

In order that this invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate typical embodiments of the invention and wherein:-

FIG. 1 is a perspective view of a typical tile roof aperture flashing assembly;

FIG.2 is a cross-sectional view of a the tile roof aperture flashing assembly illustrated in Fig. 1;

FIG. 3 illustrates an installed tile roof aperture flashing assembly according to this invention;

FIGS. 4, 6 and 7 illustrate different forms of roof aperture flashing assemblies according to the present invention, and

FIG. 5 illustrates a typical installation sequence.

-- DESCRIPTION OF THE PREFERRED EMBODIMENT --

The tile roof aperture flashing assembly 10 illustrated in FIG. 1 is adapted for use on a tiled roof. The tile roof

aperture flashing assembly 10 spans four tile supporting battens 11, and has a through-roof cylindrical upstand 12 extending from a planar base tray assembly 13 having side flashing assemblies 14 extending from opposite sides thereof. Of course the tile roof aperture flashing assembly 10 could be formed to span two or more tile supporting battens 11 as required. An inverted U-shaped upstand or rib 15 extends across the top and side edges of the base tray assembly 13 as illustrated. Along the side edges 16, the rib 15 is continued downwardly and outwardly to form the side flashing assemblies 14.

Each side flashing assembly 14 includes an upper laterally extending flange 18 contained in a plane which diverges downwardly with respect to the plane containing said base tray assembly 13 and an lower laterally extending flange 19 continuous with said upper laterally extending flange 18 and contained in a plane which converges downwardly with respect to the plane containing said base tray assembly 13 as illustrated. The upper laterally extending flanges 18, in use, extend from the upper batten 11T to intermediate batten 11I and the lower flanges 19 incline upwardly relative to the upper flanges 18 such that their lower ends may rest upon tile 9 supported on the lower batten 11L. The lower flanges are so formed, in this instance of malleable material, or otherwise such as of heat softenable material, that at their overlap with the lower tiles they may be contoured to conform with the tile profile to permit the overlapping side tiles 8 to seat back substantially to their original position over the contoured flanges. Furthermore, it will be seen from the FIG. 3 that the side tiles 8 are cut so that they closely abut the rib 15 along the side edges of the base tray assembly 13 and only a very narrow gap is left between the edges of the tiles 8 and the rib 15 minimising the volume of water which can flow from the roof onto the side flashing assemblies 14, and thus minimising leaks. At the same time a relatively unimpeded water flow path is

provided between the upstand and the ribs 15.

The base tray assembly 13 is provided with a downturned flange 20 at its lower end which may be profiled on-site as indicated in dotted outline at 21 to suit the profile of the tiles 9 supported on the lower batten 11L. The upstanding rib 15 at the upper end of the top flange 13 has a height whereby it will engage the underside of the upper row of tiles 7 and support them at the correct height.

The outer flanges 17 of the side webs 16 and the flanges 18 and 19 could be formed as separate sub-assemblies which could be riveted, welded or seam connected to the inner flanges 46 of the webs 16. Furthermore the flange assembly 18 and 19 could be made of malleable material and different to the material from which the main assembly is formed such that a skylight assembly could have the benefit of one material, such as structural strength material, for the majority of its components and malleable side flashings for conforming with the overlapped tile for weatherproofing purposes.

This embodiment has the advantage that it may be manufactured utilizing simple sheet metal working equipment whereby small scale production becomes feasible. Furthermore it is easy to install and requires minimum modification to existing or planned roof structures.

The aperture flashings assembly 40 illustrated in FIGS. 4 and 5 is a one piece seamless drawn metal member adapted to support a transparent or translucent skylight dome 41 over an aperture 39 formed in ribbed roof sheeting 38.

The flashing assembly 40 includes a base tray assembly 46 having a top flange 42 which underlies the roof sheeting 38 and a lower apron flange 43 which overlies the roof sheeting 38 and which may be cut away as illustrated at 44 in its downturned edge portion 45 to accommodate the ribs 37 in the sheeting 38. The skylight dome 41 is supported in conventional manner on an outwardly directed and perforated supporting flange 46 which engages about the upper lip of the

rectangular through-roof upstand 47. The through-roof upstand 47 is curved in cross-section and extends upwardly and inwardly from the base tray assembly 46.

The top flange 42 is stepped downwardly from the base tray portion 48 which spans the roof aperture 39 and opposed side flashings 49 which extend outwardly therefrom and include a downturned outer edge portion 50 and a returned flange 51 which is co-planar with the top flange 42.

In use the rectangular aperture 39 is formed in the roof 38, as illustrated in Fig. 5, including laterally extending cutouts 36 continuous with its top edge to enable the top flange 42 to pass through the aperture and cutouts. The flashing assembly 40 is then pivoted towards its installed position such that the upper flange 42 moves underneath the sheeting 38 at the top of the aperture 39 and the side flashings and the apron flange 43 overlie the sheeting 35 adjacent the aperture 39. The downturned edge portion 45 is butted against the sheeting ribs 37 to enable it to be marked and cutaway substantially conform to the roof profile with the roof sheeting ribs extending upwardly therethrough towards the underside of the base tray portion. The flashing assembly 40 is then secured in place and sealant is added as required.

The flashing assembly 60 illustrated in FIG.6 is similar to the flashing assembly 40 and is adapted for use on corrugated iron roofing panels. To this end the downturn edge portion 61 is adapted to be profiled to suit corrugated iron as illustrated in doted outline. Furthermore the side flanges 62 terminate at the downturned portions 64.

The flashing assembly 70 illustrated in FIG. 7 is specifically adapted for application on a tiled roof. The flashing assembly is pressed from malleable aluminum sheet material such that the deformed parts and specifically the through roof upstand 71 becomes work hardened in the pressing or drawing process while the base tray assembly 73 and particularly the lower apron flange 74 remain malleable. The

apron flange 74, the side flashings 72 and the top flange 75 are all substantially planar, however spaced drainage beads 76 are arranged about the upper and side portions of the flashing assembly as illustrated.

It will also be noted that the apron flange 74 is a relatively wide flange and it is substantially co-planar with the adjacent end portions 77 of the side flashings 72 which are contained in a plane extending obliquely to the plane of the remainder of the side and top flashings 72 and 75 respectively. This arrangement is provided for use on tile roofs as detailed in relation to the embodiment illustrated in Fig. 1. After installation, the malleable apron flange 74 is formed to the contour of the tiles so as to form a substantially weather proof mating therewith.

Of course the flashing assemblies of the present invention could be formed to surround apertures of various shapes including round, oval and irregular shape apertures and if desired ventilation apertures could be formed in the web. The flashing assemblies of the present invention could by moulded of plastics material, including reinforced plastics material, formed as a composite structure and including an integral skylight dome or fabricated, as required. All such modifications and variations thereto as would be apparent to person skilled in the art are deemed to fall within the broad scope and ambit of this invention as is defined in the appended claims.

-- CLAIMS --

1. A roof aperture flashing assembly comprising a through-roof upstand and a base tray assembly through which said upstand extends, said base tray assembly including:-

a base tray portion adapted to cover the roof aperture;

opposed flashing assemblies extending along opposite sides of said base tray portion;

a top flange assembly adapted to extend beneath the roof, and

a lower apron flange assembly which is so formed that its lower edge may substantially conform to the roof profile.

2. A roof aperture flashing assembly as claimed in claim 1 and formed integrally from sheet metal.

3. A roof aperture flashing assembly as claimed in claim 1 or claim 2, wherein said lower apron flange assembly is formed of malleable material whereby it may be conformed in-situ with the roof profile.

4. A roof aperture flashing assembly as claimed in claim 1 or claim 2, wherein said lower apron flange assembly is formed as a downturned flange whereby it may be cut-away in-situ to conform with the roof profile.

5. A roof aperture flashing assembly as claimed in any one of the preceding claims, wherein said opposed flashing assemblies and said top flange assembly are substantially co-planar extensions of said base tray portion.

6. A roof aperture flashing assembly as claimed in any one of the preceding claims, wherein said through-roof upstand is terminated remote from said base tray portion by a mounting lip adapted to form a mounting for an outwardly extending dome mounting flange.

7. A roof aperture flashing assembly as claimed in any one of the preceding claims and adapted for flashing a tile roof, wherein said opposed flashing assemblies include integral upper and lower laterally extending flanges, each said upper laterally extending flange being contained in a plane which diverges downwardly with respect to the plane containing said base tray portion and each said lower laterally extending flange extending downwardly from said upper laterally extending flange and being contained in a plane which converges downwardly with respect to the plane containing said base tray portion.

8. A roof aperture flashing assembly as claimed in claim 7, wherein said opposed flashing assemblies each extend outwardly from respective upstanding side ribs forming side terminations of said base tray portion spaced from said through-roof upstand.

9. A roof aperture flashing assembly as claimed in claim 8, wherein said upstanding side ribs are continuous with an upstanding rib assembly extending across the upper edge of said base tray assembly.

10. A tile roof aperture flashing assembly as claimed in claim 7,8 or 9, wherein each said lower laterally extending flange is a relatively wide laterally extending flange which may be contoured on site so as to substantially conform to the profile of a lower overlapped tile.

11. A tile roof aperture flashing assembly as claimed in any one of claims 7 to 30, wherein each said integral upper and lower laterally extending flanges are provided with an upstand extending along the length thereof.

12. A tile roof aperture flashing assembly including:-

a through-roof upstand;

a substantially planar base tray assembly supporting said upstand and through which said upstand extends;

an upstanding rib assembly extending across the upper edge and along the opposites sides of said base tray assembly, said upstanding rib assembly including an upper edge rib which extends along the upper edge of said base tray assembly and respective side ribs which extend along the opposite side(s) edges of said base tray assembly between said upper edge and the lower edge of said base tray assembly, each said side rib being spaced from said upstand and each forming a stop for locating the edges of the innermost tiles extending alongside the roof aperture and beside said respective side ribs;

a downwardly extending flange extending across said lower edge of said base tray assembly and being so formed that said flange may be cut away to conform to the roof tile profile;

opposed flashing assemblies each extending outwardly from respective said side ribs, each said flashing assembly including integral upper and lower laterally extending flanges, each said upper laterally extending flange extending downwardly from adjacent said upper edge to the said lower laterally extending flange and being contained in a plane which diverges downwardly with respect to the plane containing said base tray assembly and each said lower laterally extending flange extending downwardly from said upper laterally extending flange to terminate adjacent said lower edge and being contained in a plane which converges downwardly with respect to the plane containing said base tray assembly, and wherein the lengths of said upper laterally extending flanges are substantially equal.

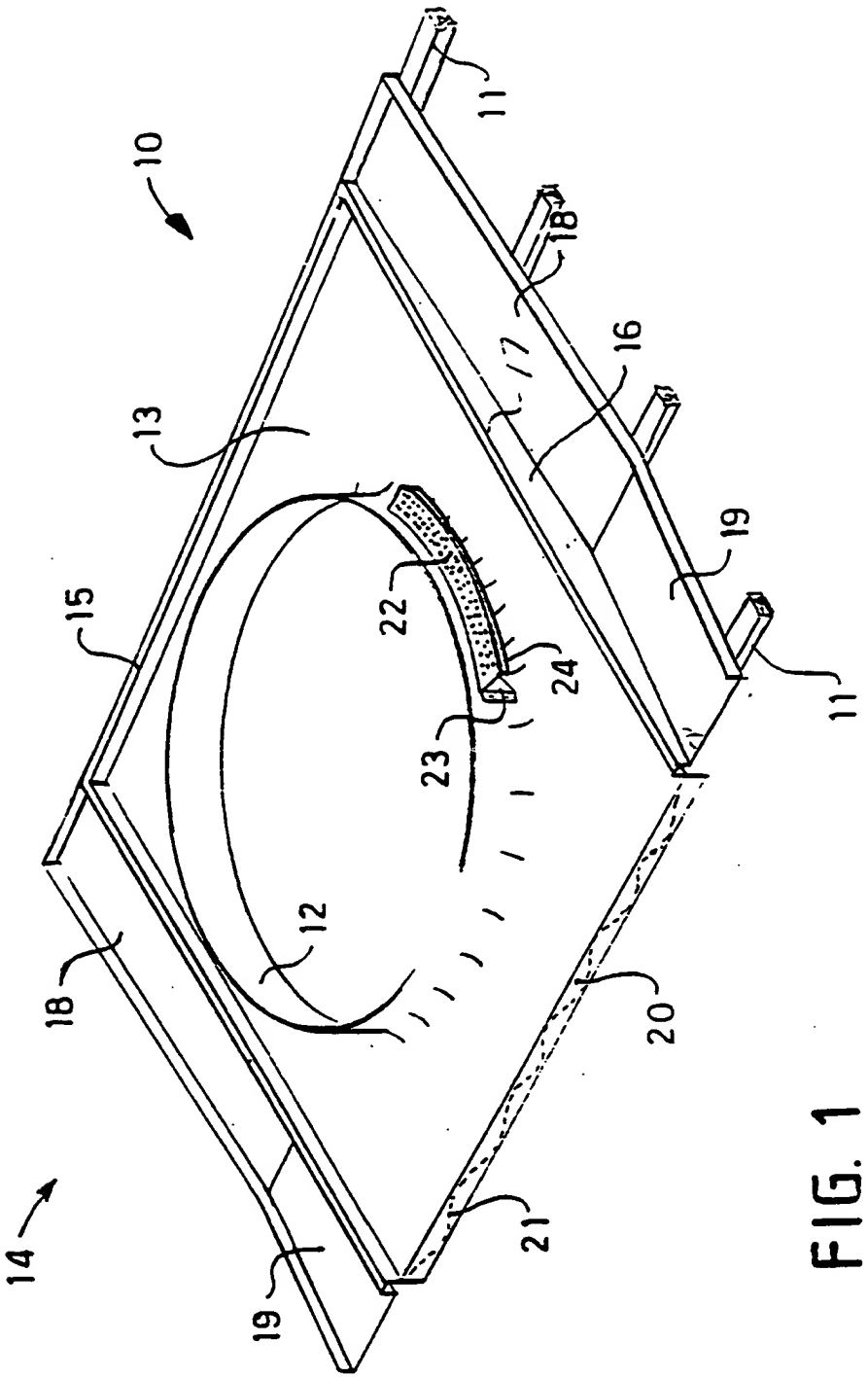


FIG. 1

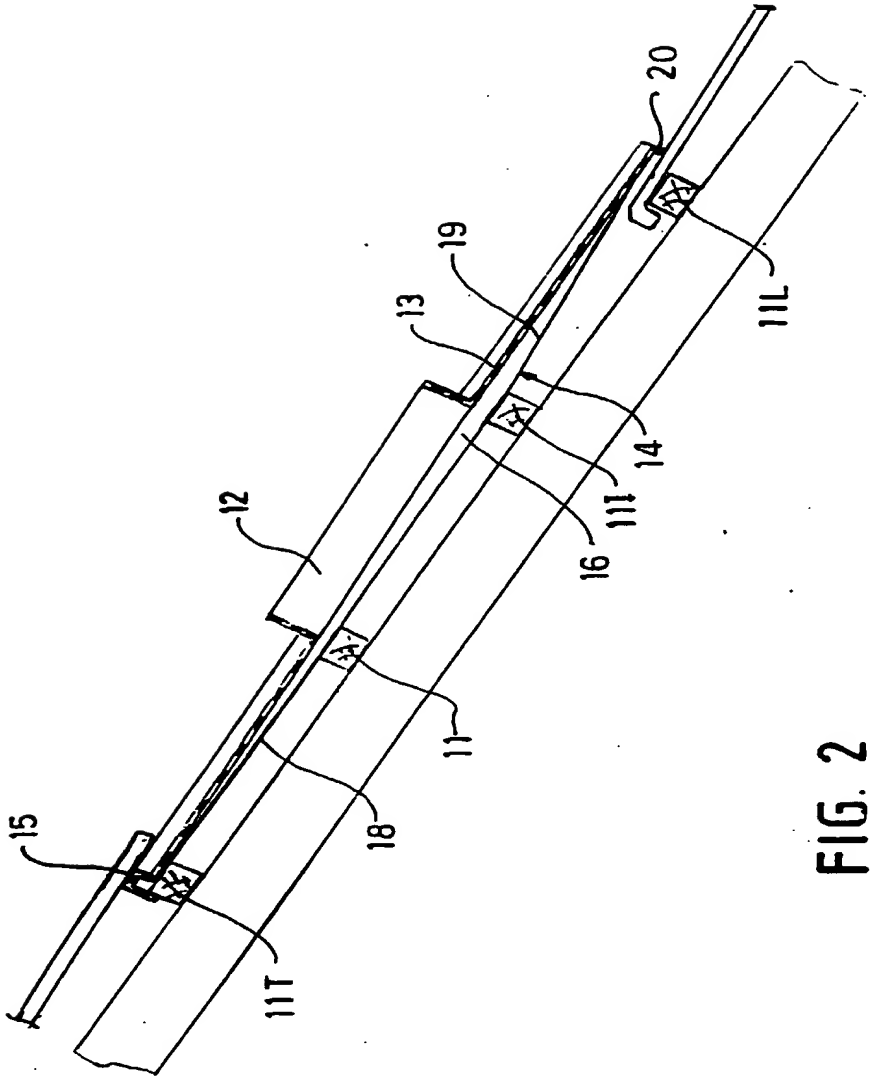


FIG. 2

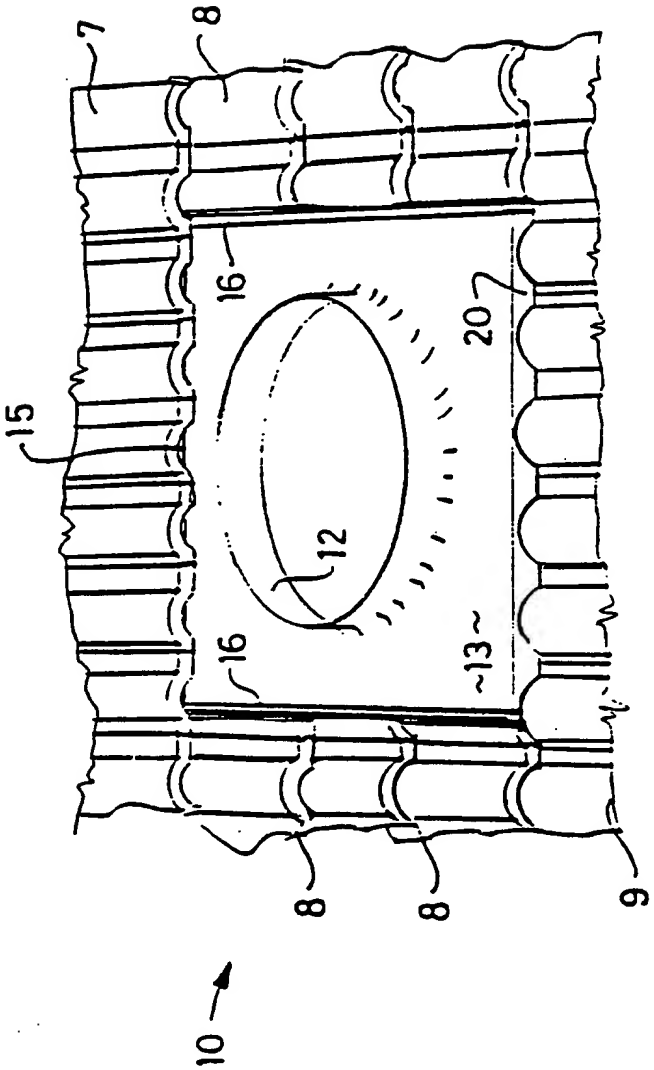


FIG. 3

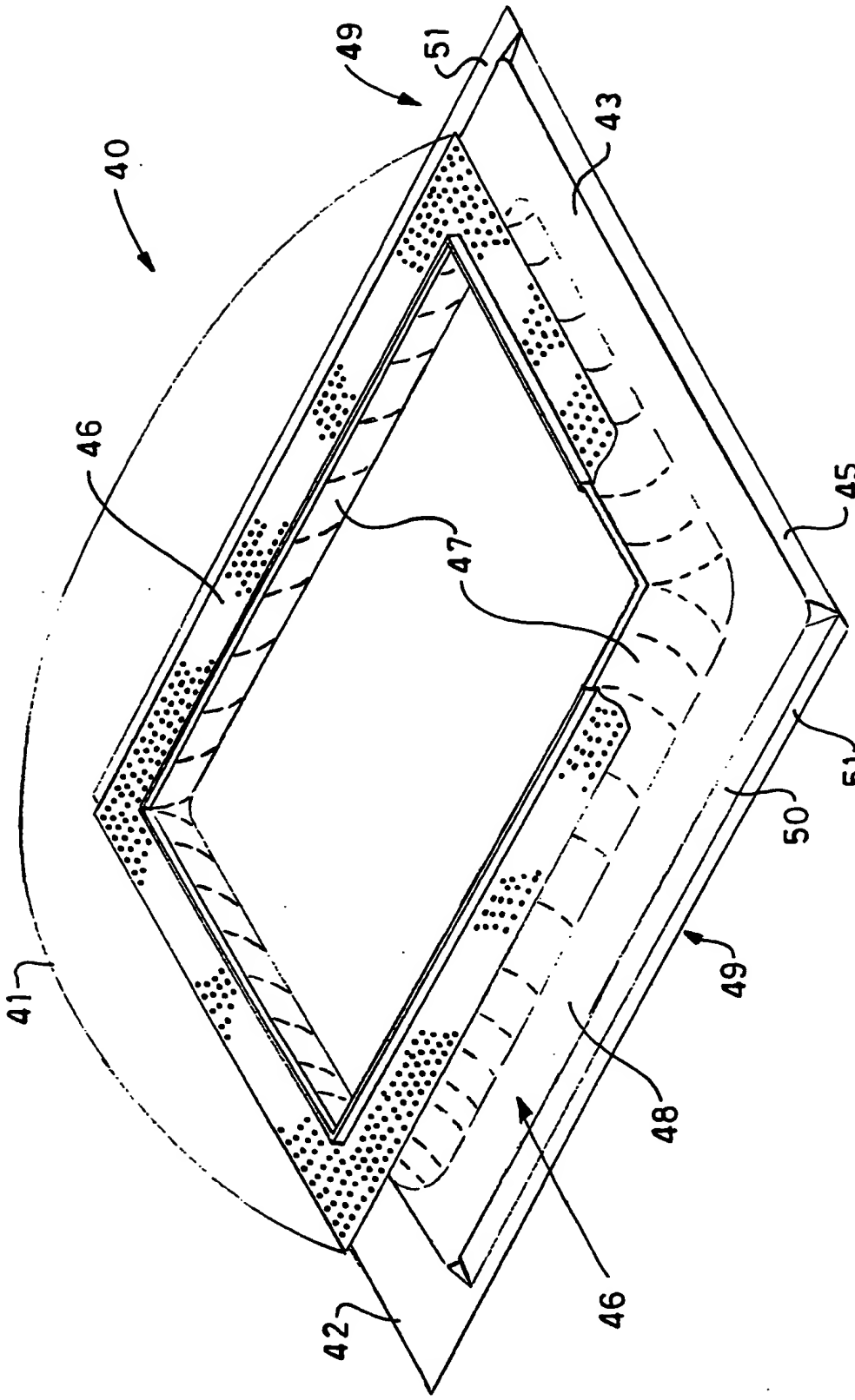


FIG. 4

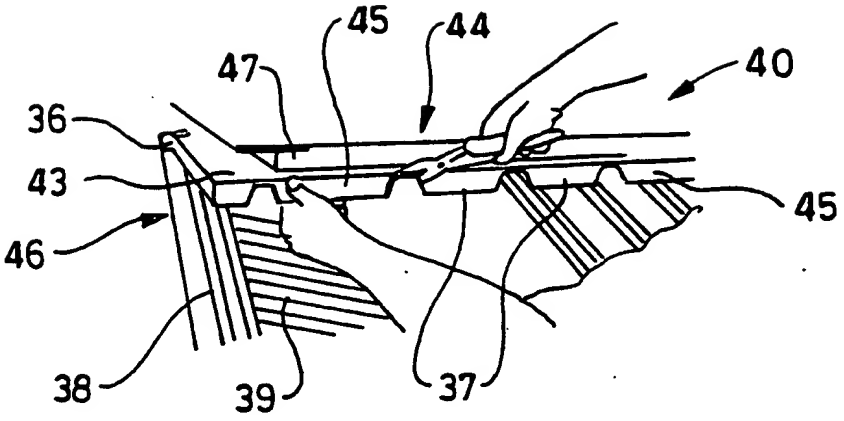


FIG. 5A

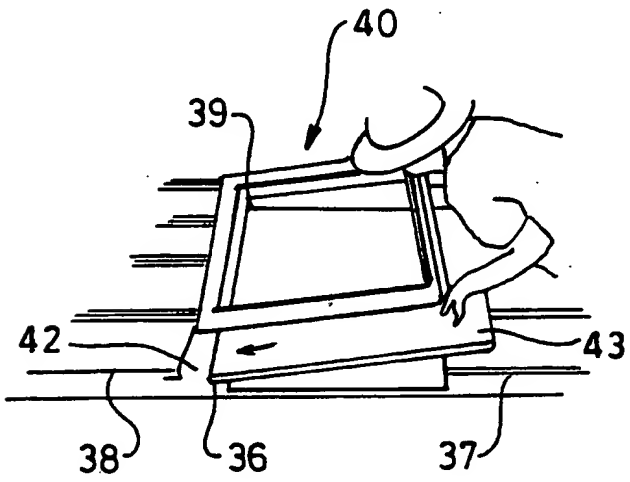


FIG. 5B

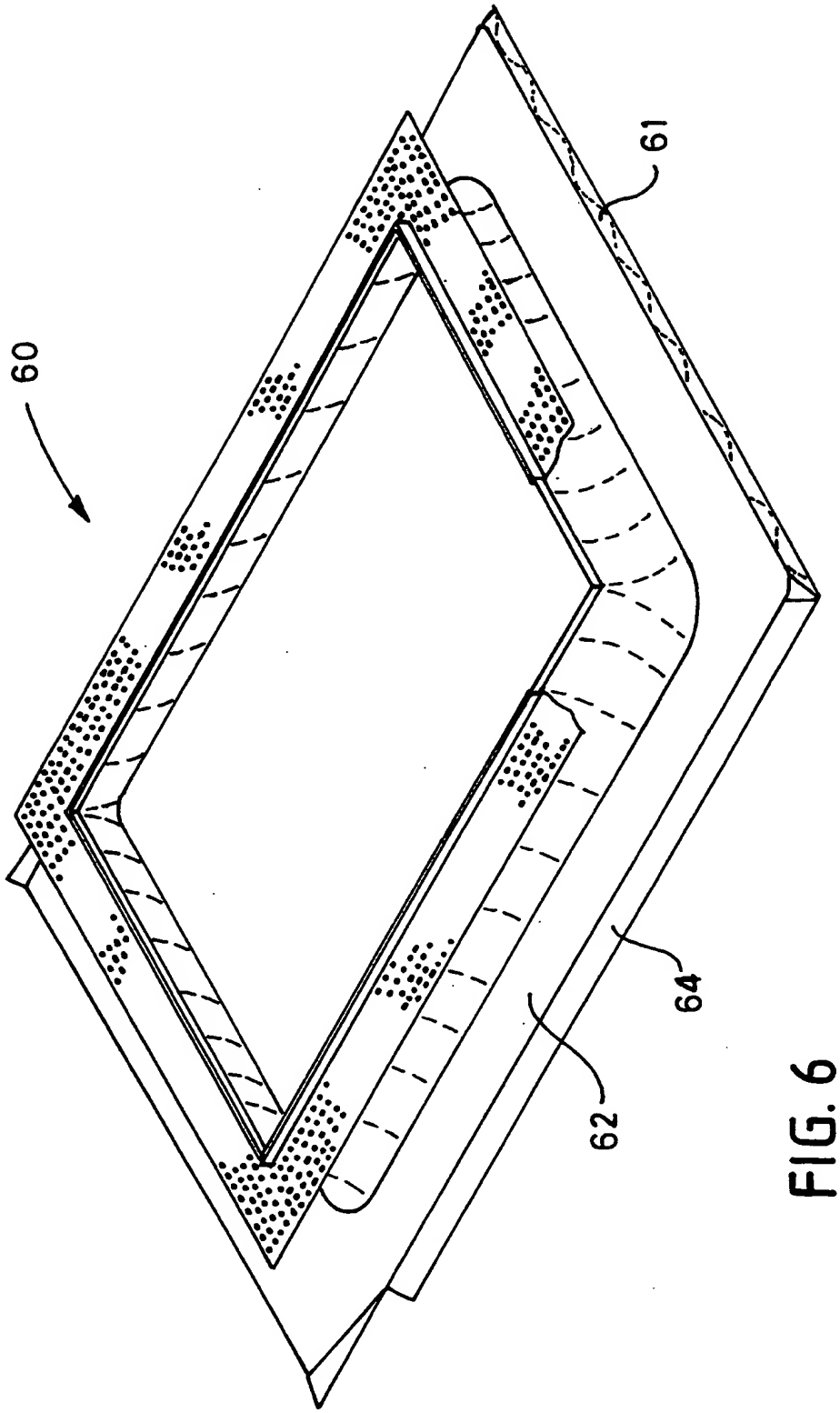


FIG. 6

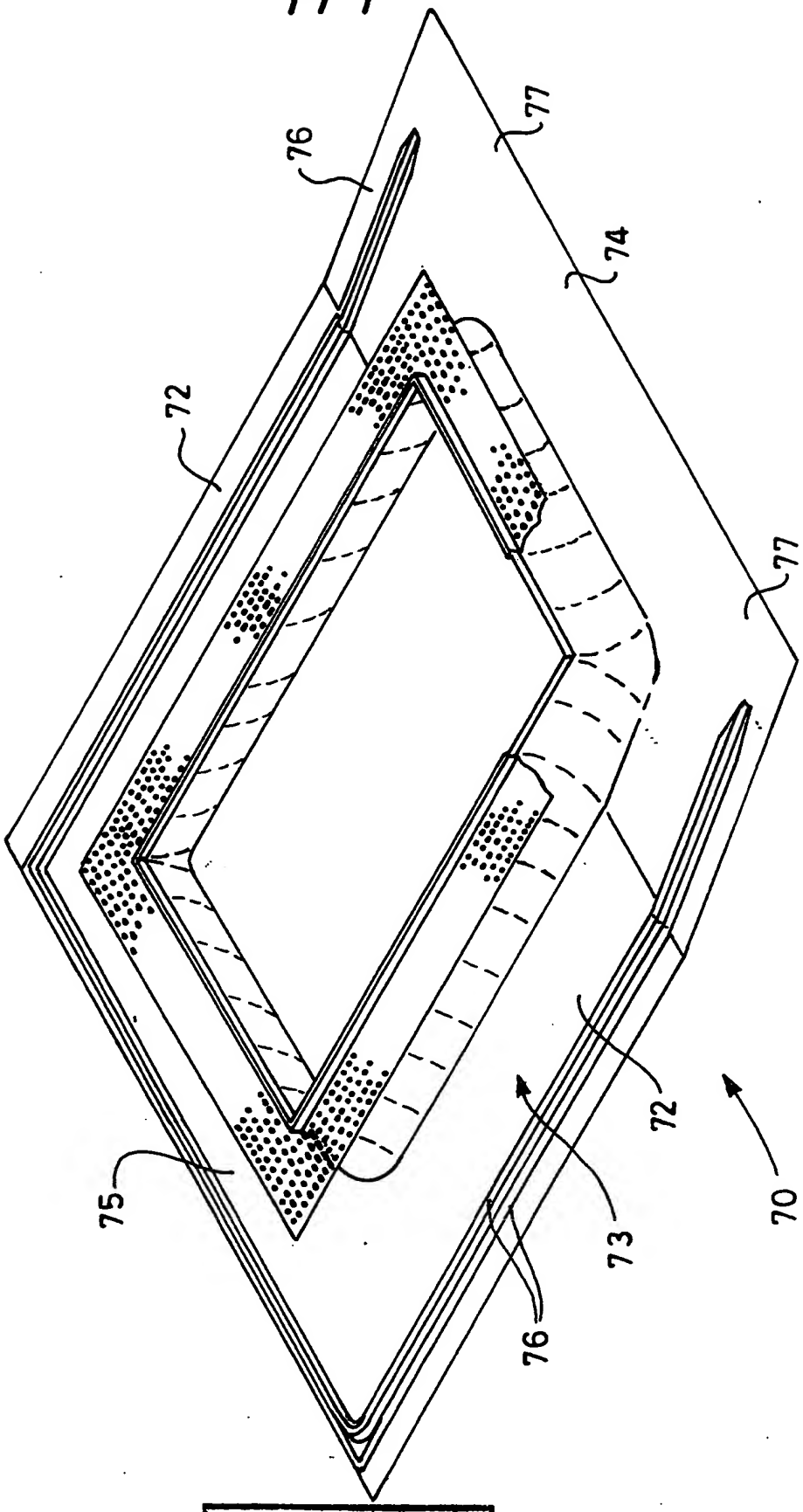


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU 93/00310

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.[5] E04D 13/14, 13/03

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: E04D 13/14, 13/03

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU: IPC as above

Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)
DERWENT
JAPIO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
X	EP,A, 320406 (SAFIZA S A) 14 June 1989 (14.06.89) figure 1, abstract	1-12
X	FR,A, 2530709 (DUCROT et al.) 27 January 1984 (27.01.84) figures 1-4	1-12

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
3 September 1993 (03.09.93)	10 SEP 1993 (10.09.93)
Name and mailing address of the ISA/AU AUSTRALIAN INDUSTRIAL PROPERTY ORGANISATION PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. 06 2853929	**Authorized officer** D R LUM Telephone No. (06) 2832544

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
X	FR,A, 2387333 (SOCIETE DES ANCIENS ETABLISSEMENTS DESCHAMPS & CIE) 15 December 1978 (15.12.78) figure 1, abstract	1-12
X	EP,A, 265102 (JEAN-JACQUES) 27 April 1988 (27.04.88) figure 1d, column 3 lines 39-51	1-12
X	FR,A, 2151541 (PRODUCTIONS ESSEMES S A) 20 April 1973 (20.04.73) figure 1, claim 1	1-12
X	AU,A, 21629/88 (NEVILLE) 2 March 1989 (02.03.89) figure 5	1-12
X	FR,A, 564302 (LUISONI) 27 December 1923 figure 1	1-12
A	DE,A, 2432294 (JAKOBI) 15 January 1976 (15.01.76) figure 1, abstract	1-12
A	GB,A, 1013479 (MALMO FLYGINDUSTRI A B) 15 December 1965 (15.12.65) figures 1-3	1-12

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member					
EP 320406	FR	2624166				
FR 2530709						
FR 2387333						
EP 265102	US	4965971	ZA	8707388	AU	79316/87
FR 2151541						
AU 21629/88	NZ	221607				
DE 2432294						

END OF ANNEX